Stop #8a: Evaluation of Plant Growth Regulators on Bermudagrass Turf

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Objective:

This study was conducted to quantify effects of Cutless MEC (flurprimidol), Primo Maxx (trinexapac-ethyl), Trimmit (paclobutrazol) and Anuew (prohexadione calcium) on growth regulation, injury and visual turfgrass quality of 'Tifway II' hybrid bermudagrass maintained as a golf course fairway.

Materials and methods:

The study was conducted on mature bermudagrass (*Cynodon dactylon*) turf grown on a Hanford fine sandy loam and mowed at 0.625 inches three times/wk. Turf received 4 lbs N/M/yr and verticutting in May 2015. The study was setup as a randomized complete block, with 4 replications on 4'x10' plots. Treatments were applied with a CO_2-powered backpack sprayer with TeeJet 8003VS nozzles (9-inch spacing; 2 gal/M) on June 26 (initial treatment), July 17 (3 WAIT), August 7 (6 WAIT) and August 28 (9 WAIT). Plots were evaluated for turf quality and injury 5 days and 3, 6 and 9 weeks after initial treatment.

Results:

On 2 July 2015, Anuew (16 oz/A) and Cutless MEC (15 oz/A) treatments resulted in improvements of turfgrass quality, while Anuew (8 oz/A) resulted in the lowest quality ratings. There was no significant difference among treatments on 16 July 2015. Primo Maxx resulted in highest quality rating on 6 August 2015, while there were no statistical differences among the other treatments in comparison to control. On 27 August 2015, Primo Maxx also resulted in highest ratings. There were no statistical differences among untreated control, Cutless MEC (15 oz/A), Anuew (8 oz/A), Anuew (16 oz/A) and Trimmit treatments, while Cutless MEC (25 oz/A), and Cutless MEC (35 oz/A) resulted in higher ratings in comparison to control.

On 2 July 2015 turfgrass injury was highest from the Cutless MEC (25 oz/A) treatment and lowest in untreated blocks. Results were similar on July 16th 2015. There was no statistical difference between all treatments on 6th August 2015. On 27th August 2015 injury was higher in all treatments in comparison to control but there were no differences between each treatment.

Treatments:

No.	Treatment	Company	Rate (oz/A)	Frequency (wks)
1	Untreated Control	-	-	-
2	Cutless MEC (15 oz/A)	SePRO	15	3
3	Cutless MEC (25 oz/A)	SePRO	25	3
4	Cutless MEC (35 oz/A)	SePRO	35	3
5	Primo Maxx	Syngenta	11	3
6	Anuew (8 oz/A)	Nufarm	8	3
7	Anuew (16 oz/A)	Nufarm	16	3
8	Trimmit	Syngenta	24	3

Plot plan:

Bermudagrass PGR Study (12F6)
North

101	**Trt 3**	201	**Trt 7**
102	**Trt 6**	202	**Trt 5**
103	**Trt 2**	203	**Trt 3**
104	**Trt 7**	204	**Trt 8**
105	**Trt 4**	205	**Trt 2**
106	**Trt 8**	206	**Trt 1**
107	**Trt 1**	207	**Trt 4**
108	**Trt 5**	208	**Trt 6**

LGIS STUDY PLOT

301	**Trt 1**	401	**Trt 6**
302	**Trt 4**	402	**Trt 1**
303	**Trt 7**	403	**Trt 5**
304	**Trt 2**	404	**Trt 3**
305	**Trt 5**	405	**Trt 8**
306	**Trt 6**	406	**Trt 4**
307	**Trt 3**	407	**Trt 7**
308	**Trt 8**	408	**Trt 2**

Tables: Effects of PGRs on bermudagrass quality and injury.

No.	Treatment	Turfgrass Quality (0-9)			
		7/02/2015	7/16/2015	8/6/2015	8/27/2015
1	Untreated Control	5.75 **ab**	6.00 **a**	4.25 **bc**	4.25 **d**
2	Cutless MEC (15 oz/A)	6.25 **a**	5.50 **a**	5.00 **bc**	5.00 **bcd**
3	Cutless MEC (25 oz/A)	5.50 **ab**	4.75 **a**	5.00 **bc**	5.75 **b**
4	Cutless MEC (35 oz/A)	5.75 **ab**	5.75 **a**	6.00 **ab**	5.50 **bc**
5	Primo Maxx	5.75 **ab**	5.50 **a**	7.25 **a**	7.00 **a**
6	Anuew (8 oz/A)	4.75 **b**	5.25 **a**	5.25 **bc**	4.75 **cd**
7	Anuew (16 oz/A)	6.25**a**	5.75 **a**	5.75 **b**	4.75 **cd**
8	Trimmit	5.75 **ab**	5.00 **a**	4.75 **bc**	4.50 **d**

No.	Treatment	Turfgrass Injury (0-100%)			
		7/02/2015	7/16/2015	8/6/2015	8/27/2015
1	Untreated Control	11 **b**	15 **b**	15 **a**	2 **b**
2	Cutless MEC (15 oz/A)	15 **ab**	18 **ab**	15 **a**	9 **a**
3	Cutless MEC (25 oz/A)	20 **a**	25 **a**	15 **a**	7 **a**
4	Cutless MEC (35 oz/A)	14 **ab**	18 **ab**	10 **a**	9 **a**
5	Primo Maxx	16 **ab**	18 **ab**	4 **a**	5 **a**
6	Anuew (8 oz/A)	18 **ab**	19 **ab**	11 **a**	7 **a**
7	Anuew (16 oz/A)	14 **ab**	19 **ab**	8 **a**	9 **a**
8	Trimmit	14 **ab**	24 **ab**	16 **a**	9 **a**